

**REMARKS**

The Examiner has rejected claims 13-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. ("Sanada") in view of JP 2001-081372 to Ikemoto et al. ("Ikemoto"). The Examiner has also rejected claims 13-18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. ("Kubota") in view of Ikemoto. In addition, the Examiner has rejected claims 13-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0218661 to Okada et al. ("Okada") in view of Ikemoto. Claims 13-20 are currently pending. The following remarks are considered by applicant to overcome each of the Examiner's outstanding rejections to current claims 13-20. An early Notice of Allowance is therefore requested.

**I. SUMMARY OF RELEVANT LAW**

The determination of obviousness rests on whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. In determining obviousness, four factors should be weighed: (1) the scope and content of the prior art, (2) the differences between the art and the claims at issue, (3) the level of ordinary skill in the art, and (4) whatever objective evidence may be present. Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. The Examiner carries the burden under 35 U.S.C. § 103 to establish a prima facie case of obviousness and must show that the references relied on teach or suggest all of the limitations of the claims.

**II. REJECTION OF CLAIMS 13-20 UNDER 35 U.S.C. §103(A) OVER SANADA IN VIEW OF IKEMOTO**

On page 2 of the current Office Action, the Examiner rejects claims 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Sanada in view Ikemoto. This rejection is respectfully traversed and believed overcome in view of the following discussion.

**Claim 13**

Independent Claim 13 states:

“A water base ink for ink-jet recording comprising:

“a dispersible coloring agent;

“a proplene-glycol ether;

“a surfactant represented by the following general formula (3):



wherein n represents an integer of 2 to 4, R<sup>1</sup> represents an alkyl group having a number of carbon atoms of 12 to 15, and M represents Na or triethanolamine.”

The Examiner asserts that Sanada discloses a propylene glycol ether at paragraph [0076]. However, the only glycol ethers disclosed by Sanada are ethylene glycol monomethyl (or ethyl) ether, diethylene glycol monomethyl (or ethyl) ether, and triethylene glycol monomethyl (or ethyl) ether. These are all ethylene-glycol ethers. None of them are propylene-glycol ethers. Accordingly, the combination of Sanada and Ikemoto fails to teach or suggest all of the limitations of Claim 13.

In addition, the Examiner admits that Sanada fails to disclose a surfactant represented by the Formula (3) of the current application. Office Action (11/27/06), P. 1. As a result, the Examiner cites to Ikemoto for the disclosure of Formula (3). *Id.* However, the teachings of Ikemoto are directed to an ink containing a non-dispersible coloring agent, i.e., a pigment, while Claim 13 contains a dispersible coloring agent. Non-dispersible coloring agents behave very differently from dispersible coloring agents. Surfactants that work well with non-dispersible coloring agents do not necessarily work well with dispersible coloring

agents. In fact, Ikemoto specifically states that the polyoxyethylene alkyl ethereal sulfate derivative disclosed is included solely to disperse the pigment. On the other hand, the surfactants disclosed in Sanada are not included as dispersants as the ink of Sanada contains a self-dispersing pigment. Sanada, P. 2, ¶ [0013]. Moreover, there is no suggestion in either Sanada or Ikemoto that the polyoxyethylene alkyl ethereal sulfate derivative disclosed in Ikemoto is substitutable for the surfactants disclosed in Sanada. As a result, one of ordinary skill in the art would find (1) no motivation to combine the teachings of Ikemoto with those of Sanada and (2) no reasonable expectation of success of combining the teachings of Ikemoto with those of Sanada.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in independent Claim 13, and there is no motivation to combine the references and no reasonable expectation of success of the combination, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of independent Claim 13. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

#### **Claim 14**

Claim 14 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 14. In addition, Claim 14 states, in part:

“wherein the propylene glycol ether is dipropylene glycol propyl ether.”

As discussed above, Sanada fails to disclose any propylene glycol ether, let alone dipropylene glycol propyl ether. As a result, the combination of Sanada and Ikemoto fails to teach or suggest all of the limitations of Claim 14.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 14, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 14. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 14 under 35 U.S.C. § 103(a) as being

unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

**Claim 15**

Claim 15 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 15. In addition, Claim 15 states, in part:

“wherein a content of the propylene glycol ether is 2% by weight to 3% by weight.”

As discussed above, Sanada fails to disclose any propylene glycol ether, let alone the range of propylene glycol ether of Claim 15. As a result, the combination of Sanada and Ikemoto fails to teach or suggest all of the limitations of Claim 15.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 15, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 15. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

**Claim 16**

Claim 16 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 16. In addition, Claim 16 states, in part:

“wherein the surfactant represented by general formula (3) is contained by 0.1 to 3% by weight.”

As Examiner has admitted, Sanada fails to disclose any surfactant of general formula (3). Yet the Examiner cites to Sanada as disclosing this claim language of Claim 16. This is obviously an impossibility. Since Sanada admittedly fails to disclose general formula (3), it cannot disclose the amount of general formula (3) as specified in Claim 16. As a result, the combination of Sanada and Ikemoto fails to teach or suggest all of the limitations of Claim 16.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 16, Applicants respectfully assert that Examiner has failed

to establish a prima facie case of obviousness of Claim 16. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 16 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

**Claim 17**

Claim 17 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 17. In addition, Claim 17 states, in part:

“wherein a content ratio by weight of propylene glycol ether/surfactant is 5 to 10.”

As Examiner has admitted, Sanada fails to disclose any surfactant of general formula (3). Yet the Examiner cites to Sanada as disclosing this claim language of Claim 17. This is obviously an impossibility. Since Sanada admittedly fails to disclose the surfactant general formula (3) and fails to disclose any propylene glycol ether, it cannot disclose any ratio between that surfactant and the propylene glycol ether as specified in Claim 17. As a result, the combination of Sanada and Ikemoto fails to teach or suggest all of the limitations of Claim 17.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 17, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 17. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

**Claims 18-20**

Claims 18-20 are ultimately dependent from Claim 13. As Claim 13 is allowable, so must be claims 18-20. Therefore, Applicants respectfully request that Examiner remove the rejections of claims 18-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0195275 to Sanada et al. in view of JP 2001-081372 to Ikemoto et al.

**III. REJECTION OF CLAIMS 13-18 UNDER 35 U.S.C. §103(A) OVER KUBOTA IN VIEW OF IKEMOTO**

On page 3 of the current Office Action, the Examiner rejects claims 13-18 under 35 U.S.C. § 103(a) as being unpatentable over Kubota in view Ikemoto. This rejection is respectfully traversed and believed overcome in view of the following discussion.

**Claim 13**

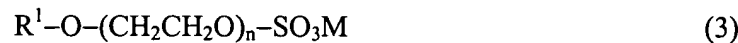
Independent Claim 13 states:

“A water base ink for ink-jet recording comprising:

“a dispersible coloring agent;

“a proplene-glycol ether;

“a surfactant represented by the following general formula (3):



wherein n represents an integer of 2 to 4, R<sup>1</sup> represents an alkyl group having a number of carbon atoms of 12 to 15, and M represents Na or triethanolamine.”

The Examiner asserts that Kubota discloses all of Claim 13 except for the surfactant of general formula (3). However, this misconstrues the teachings of Kubota. Specifically, the Examiner's interpretation of Kubota ignores the fact that it discloses two types of colorants: dyes and pigments.

Claim 13 requires a dispersible coloring agent. Pigments alone are not dispersible coloring agents. Pigments only become dispersible coloring agents when they are chemically modified to be dispersible. The pigment of Kubota “is preferably added in the form of a pigment dispersion prepared by dispersing the pigment in an aqueous medium with the aid of a dispersant or a surfactant.” Col. 5, Lns. 28-31 (emphasis added). This is the only use that is described in Kubota for the surfactant: to create a pigment dispersion. No other uses for the surfactants described in Kubota is disclosed.

The only propylene-glycol ethers disclosed by Kubota are disclosed as surfactants. Kubota, Col. 6, Lns. 16-17. Contrary to the examiner's assertion, no propylene-

glycol ethers are disclosed by Kubota at Col. 5, Lns. 50-67. Since the only propylene-glycol ethers disclosed by Kubota are disclosed as surfactants, and the only use of surfactants disclosed by Kubota is for creating a pigment dispersion, the only use of the propylene-glycol ethers disclosed by Kubota is for creating a pigment dispersion. The surfactants of Kubota, and hence the propylene-glycol ethers of Kubota, are never disclosed as being used in combination with a dispersible coloring agent, as stated in Claim 13. The propylene-glycol ethers of Kubota are only disclosed as being used to create a dispersible coloring agent, not as being added in addition to a dispersible coloring agent. Accordingly, the combination of Kubota and Ikemoto fails to teach or suggest all of the limitations of Claim 13.

In addition, the Examiner admits that Kubota fails to disclose a surfactant represented by the Formula (3) of the current application. Office Action (11/27/06), P. 1. As a result, the Examiner cites to Ikemoto for the disclosure of Formula (3). *Id.* However, the teachings of Ikemoto are directed to an ink containing a non-dispersible coloring agent, i.e., a pigment, while Claim 13 contains a dispersible coloring agent. Non-dispersible coloring agents behave very differently from dispersible coloring agents. Surfactants that work well with non-dispersible coloring agents do not necessarily work well with dispersible coloring agents. In fact, Ikemoto specifically states that the polyoxyethylene alkyl ethereal sulfate derivative disclosed is included solely to disperse the pigment.

In addition, as stated above, the surfactants disclosed in Kubota are only disclosed as being used with a pigment to create a self-dispersing coloring agent, and not disclosed as being used in addition to a self dispersing coloring agent. Moreover, there is no suggestion in either Kubota or Ikemoto that the polyoxyethylene alkyl ethereal sulfate derivative disclosed in Ikemoto is substitutable for the surfactants disclosed in Kubota. As a result, one of ordinary skill in the art would find (1) no motivation to combine the teachings of Ikemoto with those of Kubota and (2) no reasonable expectation of success of combining the teachings of Ikemoto with those of Kubota.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in independent Claim 13, and there is no motivation to combine the references and no reasonable expectation of success of the combination, Applicants

respectfully assert that Examiner has failed to establish a prima facie case of obviousness of independent Claim 13. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. in view of JP 2001-081372 to Ikemoto et al.

**Claim 14**

Claim 14 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 14. In addition, Claim 14 states, in part:

“wherein the propylene glycol ether is dipropylene glycol propyl ether.”

As discussed above, Kubota fails to disclose any propylene glycol ether used in combination with a dispersible coloring agent. Moreover fails to disclose dipropylene glycol propyl ether specifically. As a result, the combination of Kubota and Ikemoto fails to teach or suggest all of the limitations of Claim 14.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 14, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 14. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. in view of JP 2001-081372 to Ikemoto et al..

**Claim 15**

Claim 15 is dependent from Claim 13. As Claim 13 is allowable, so must be Claim 15. In addition, Claim 15 states, in part:

“wherein a content of the propylene glycol ether is 2% by weight to 3% by weight.”

As discussed above, Kubota fails to disclose any propylene glycol ether used in combination with a dispersible coloring agent. In addition, the Examiner incorrectly relies on the range for the solvent disclosed in Kubota as disclosing the range of propylene glycol ether. Propylene glycol ether is never disclosed as a solvent in Kubota, it is only disclosed as a surfactant used to make a dispersible coloring agent. Since no range for the surfactant of



Kubota is given, and propylene glycol ether is not disclosed in any of the examples, Kubota completely fails to disclose the range of propylene glycol ether as stated in Claim 15. As a result, the combination of Kubota and Ikemoto fails to teach or suggest all of the limitations of Claim 15.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 15, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 15. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. in view of JP 2001-081372 to Ikemoto et al.

**Claim 16**

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“wherein the surfactant represented by general formula (3) is contained by 0.1 to 3% by weight.”

As Examiner has admitted, Kubota fails to disclose any surfactant of general formula (3). Yet the Examiner cites to Kubota as disclosing this claim language of Claim 16. This is obviously an impossibility. Since Kubota admittedly fails to disclose general formula (3), it cannot disclose the amount of general formula (3) as specified in Claim 16. As a result, the combination of Kubota and Ikemoto fails to teach or suggest all of the limitations of Claim 16.

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“wherein a content ratio by weight of propylene glycol ether/surfactant is 5 to 10.”

As Examiner has admitted, Kubota fails to disclose any surfactant of general formula (3). Yet the Examiner cites to Kubota as disclosing this claim language of Claim 17. This is obviously an impossibility. Since Kubota admittedly fails to disclose the surfactant general formula (3) and fails to disclose the use of any propylene glycol ether with a dispersible coloring agent, it cannot disclose any ratio between that surfactant and the propylene glycol ether as specified in Claim 17. As a result, the combination of Kubota and Ikemoto fails to teach or suggest all of the limitations of Claim 17.

Since the references cited by the Examiner fail to teach or suggest each and every element as set forth in Claim 17, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of Claim 17. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. in view of JP 2001-081372 to Ikemoto et al.

**Claims 18**

Claim 18 is ultimately dependent from Claim 13. As Claim 13 is allowable, so must be Claim 18. Therefore, Applicants respectfully request that Examiner remove the rejections of Claim 18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,485,138 to Kubota et al. in view of JP 2001-081372 to Ikemoto et al.

IV. REJECTION OF CLAIMS 13-20 UNDER 35 U.S.C. §103(A) OVER OKADA IN VIEW OF IKEMOTO

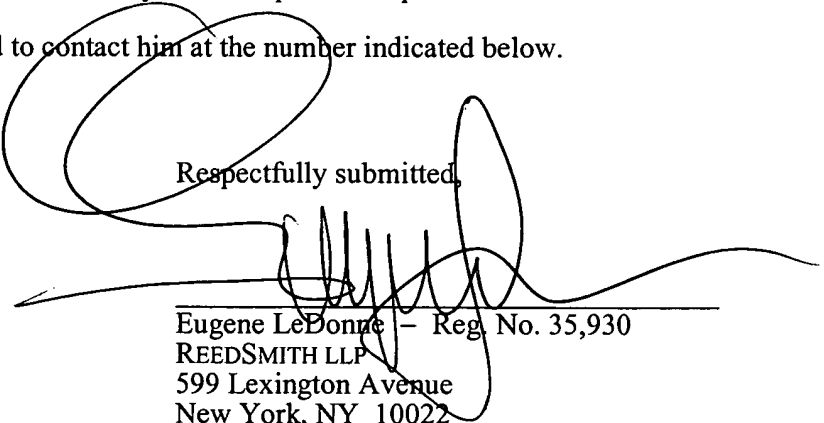
On page 4 of the current Office Action, the Examiner rejects claims 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Okada in view Ikemoto. This rejection is respectfully traversed and believed overcome in view of the following discussion.

The Examiner relies on Okada contending that it qualifies as prior art under 35 U.S.C. 102(e) and thus qualifies as a 102(e)/103 reference. However, contrary to the Examiner's assertion, Okada is does not qualify as a 102(e)/103 reference. This is due to the fact that both Okada and the current application were commonly owned by Brother Kogyo Kabushiki Kaisha at the time the current invention was made. Thus, according to 35 U.S.C. § 103(c), Okada may not be used to support a 35 U.S.C. § 103(a) rejection.

Therefore, Applicants respectfully request that Examiner remove the rejections of claims 13-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0218661 to Okada et al. in view of JP 2001-081372 to Ikemoto et al.

Based upon the above remarks, Applicant respectfully requests reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite the prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,

  
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